

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method, operable in a computer system, for analyzing of speech, the method causing the computer system to execute the ~~steps~~ acts of:

[[-]] inputting a speech ~~signal~~, signal;

[[-]] obtaining a first harmonic of the speech signal,

[[-]] determining a phase-difference ($\Delta\phi$) between the speech signal and the first harmonic for centering a windowing function, wherein said phase difference is determined between a phase of a maximum amplitude of said speech signal and a phase zero of the ~~first harmonic of the speech signal~~ where an amplitude of the first harmonic is zero; and

outputting the phase difference to a memory for storage.

2. (Currently Amended) The method of claim 1, ~~the~~
~~determination of the phase difference comprising the steps of:~~

[[~~-~~]] wherein the determining comprises the act of
determining a location of said maximum of the speech ~~signal,~~
signal.

3. (Previously Presented) The method of claim 1, whereby the
speech signal is a diphone signal.

4. (Currently Amended) A method for synthesizing speech, the
method, operable in a computer system, comprising the ~~steps~~ acts
of:

windowing by a window function diphone samples obtained from a
speed signal;

[[~~-~~]] ~~selecting of the windowed diphone samples, the diphone~~
~~samples being windowed by a~~ wherein the window function being is
centered with respect to a phase angle which is determined as a
phase difference between a phase of a maximum amplitude of said

speech signal and a phase zero of a zero crossing of a first harmonic of the speech signal, signal where an amplitude of the first harmonic is zero; and

[[]] concatenating the selected windowed diphone samples to form the synthesized speech; and

outputting the synthesized speech.

5. (Original) The method of claim 4, the speech signal being a diphone signal.

6. (Previously Presented) The method of claim 4, the window function being a raised cosine or a triangular window.

7. (Previously Presented) The method of claim 4 further comprising inputting of information being indicative of diphones and a pitch contour, the information forming the basis for selecting of the windowed diphone samples.

8. (Currently Amended) The method of ~~claim 4, whereby~~ claim 7,

wherein the information is provided from a language processing module of a text-to-speech system.

9. (Currently Amended) The method of claim 4 further comprising the acts of:

[[~~-~~]] inputting of speech, and

[[~~-~~]] windowing the speech by ~~means of the~~ window function to obtain the windowed diphone samples.

10. (Currently Amended) A computer readable medium storing a computer program product which when loaded into a computer system caused the computer system to perform a method in accordance with claim 1.

11. (Currently Amended) A speech analysis device for analyzing a speech signal comprising:

[[~~-~~]] ~~means for inputting of a speech signal,~~

[[~~-~~]] ~~means~~ a filter for obtaining a first harmonic of the speech signal,

[[~~-~~]] ~~means for a processor for~~ determining a phase difference ($\Delta\phi$) between the speech signal and the first harmonic for centering a windowing function, wherein said phase difference is determined between a phase of a maximum amplitude of said speech signal and a phase zero (ϕ_0) of the speech signal first harmonic where an amplitude of the first harmonic is zero.

Claim 12 (Canceled)

13. (Previously Presented) The speech analysis device of claim 11, wherein the speech signal is a diphone signal.

14. (Currently Amended) A speech synthesis device comprising a processor configured for:

[[~~-~~]] ~~means for selecting of windowed diphone samples~~ of a speech signal, the diphone samples being windowed by a window function being centered with respect to a phase angle which is determined as a phase difference between ~~a~~ the speech signal and a first harmonic of the ~~speech signal~~ signal, wherein said phase

difference is determined between a phase of a maximum amplitude of
said speech signal and a phase zero of the first harmonic of the
speech-signal signal where an amplitude of the first harmonic is
zero; and

[[-]] ~~means for concatenating~~ the selected windowed diphone
signals.

15. (Original) The speech synthesis device of claim 14,
wherein the speech signal is a diphone signal.

16. (Previously Presented) The speech synthesis device of
claim 14 the window function being a raised cosine or a triangular
window.

17. (Currently Amended) The speech synthesis device of claim
~~14 further comprising means for inputting of 14, wherein the~~
processor is further configured to receive information being
indicative of diphones and a pitch contour, ~~the means for selecting~~
and to select the windowed diphones ~~being adapted to perform the~~

~~selection~~ based on the information.

18. (Currently Amended) A text-to-speech system comprising:

[[~~-~~]] a language processing means processor for providing of information being indicative of diphones and a pitch contour,
contour of a speech signal; and

[[~~-~~]] a speech synthesis means comprising means for
synthesizer configured to:

[[~~-~~]] selecting of select windowed diphone samples based on the information, the diphone samples being windowed by a window function being centered with respect to a phase angle which is determined as a phase difference between a phase of a maximum amplitude of said speech signal and a first harmonic of the speech signal where an amplitude of the first harmonic is zero; and

[[~~-~~]] means for concatenating concatenate the selected windowed diphone samples.

19. (Original) The text-to-speech system of claim 18, whereby the window function is a raised cosine or a triangular window.

20. (Currently Amended) A speech processing system comprising
a processor configured to:

[[~~-~~]] ~~means for inputting of~~ receive a signal comprising
natural speech signal,

[[~~-~~]] ~~means for windowing~~ window the natural speech signal by
~~means of a~~ window function being centered with respect to a phase
angle determined as a phase difference between a phase of a maximum
amplitude of said natural speech signal and a first harmonic of the
natural speech signal where an amplitude of the first harmonic is
zero to provide windowed diphone samples,

[[~~-~~]] ~~means for processing of~~ process the windowed diphone
samples, and

~~means for concatenating~~ concatenate the selected windowed
diphone samples.

21. (New) The method of claim 1, wherein the phase zero is
where the amplitude of the first harmonic crosses zero in a
transition from a negative amplitude to a positive amplitude of the

first harmonic.

22.(New) The method of claim 1, further comprising the act of extracting diphones from the speech signal, wherein the obtaining act includes low-pass filtering of the diphones.

23.(New) The method of claim 4, wherein the window function is centered on the phase angle which is equal to the phase difference plus the phase zero.

24.(New) The method of claim 4, wherein the window function is be symmetric with respect to the phase angle.

25.(New) The method of claim 4, wherein the window function and the diphone samples that are windowed are offset by the phase difference.